

Response to Questions
7/10/2003

Technical Standards

1. *Which technical standards, including those referenced in the PSIP Agreement (e.g., ATSC A/65, SCTE DVS-097 Rev 7, DVS 234r1), have been amended since the MOU was submitted (i.e., is SCTE 40 2001 now SCTE 40 2003)? What is the reason for the specific change proposed to the SCTE 40 2001 standard?*

SCTE 40 2001 (formerly DVS/313), *Digital Cable Network Interface Standard*, was amended by DVS/535, and is now SCTE 40 2003. The reason for the specific change proposed to the SCTE 40 2001 was to accommodate existing headend equipment currently in use by several cable MSOs. We note that SCTE has submitted SCTE 40 2003 to ANSI for approval and adoption as ANSI/SCTE 40 2003. Approval is expected in August.

ANSI/SCTE 54 2002 (formerly DVS/241), *Digital Video Service Multiplex and Transport System Standard for Cable Television*, was amended by DVS/435r4, and is now ANSI/SCTE 54 2003.

ANSI/SCTE 28 2001 (formerly DVS/295), *Host-POD Interface Standard*, was amended by DVS/519r2, and is now SCTE 28 2003. We note that SCTE has submitted SCTE 28 2003 to ANSI for approval and adoption as ANSI/SCTE 28 2003. Approval is expected in August.

ANSI/SCTE 41 2001 (formerly DVS/301), *POD Copy Protection Standard*, was amended by DVS/301r4, and is now SCTE 41 2003. We note that SCTE has submitted SCTE 41 2003 to ANSI for approval and adoption as ANSI/SCTE 41 2003. Approval is expected in July.

With respect to the PSIP Agreement, SCTE has rescinded SCTE DVS-097 Rev 7. The updated reference should be ATSC A/65B: *ATSC Program and System Information Protocol for Terrestrial Broadcast and Cable*. SCTE DVS 234r1 has been superseded by ANSI/SCTE 65 2002, which is currently one of the standards referenced in the proposed rules. Similarly, EIA-752, referenced in Section 2, Paragraph 6 of the PSIP Agreement has been incorporated into CEA-608-B: *Line 21 Data Services*, and should be referenced as such.

2. *Please provide for the formal record official copies of all of the standards that are referenced in the proposed rules, including those referenced in the PSIP Agreement. To the extent that a standard is modified or amended by another document (e.g., SCTE 40 2001, as amended by DVS/535), if such amendment has not yet been made a part of the official standard, then a copy of the amending document would be needed as well. (For any standards to be incorporated by reference into the FCC rules, we are required to provide copies to the Director of the Federal Register for approval and maintain copies for public inspection.)*

Delivered separately in electronic format are the ATSC, SCTE, and CEA standards referenced in the proposed rules. These are the published versions, most of which incorporate the "as amended by" changes referenced in the MOU, thus superceding that language. Official titles can be taken from the covers of the standards. A table is provided below that links the standards referenced in the MOU to the current standard number and title.

MOU Reference	Current Reference	Title
SCTE 40 2001 as amended by DVS/535 (as of 0/29/02)	SCTE 40 2003	<i>Digital Cable Network Interface Standard</i>
ANSI/SCTE 65 2002 (as of 10/29/02)	ANSI/SCTE 65 2002	<i>Service Information Delivered Out-Of-Band For Digital Cable Television</i>
SCTE 54 2002 as amended by DVS/435r4 (as of 10/29/02)	ANSI/SCTE 54 2003	<i>Digital Video Service Multiplex and Transport System Standard for Cable Television</i>
SCTE 28 2001 (as of 10/29/02) as amended by DVS/519r2 (as of 11/05/02)	SCTE 28 2003	<i>HOST-POD Interface Standard</i>
SCTE 41 2001 as amended by DVS/301r4 (as of 10/29/02)	SCTE 41 2003	<i>POD Copy Protection System</i>
ANSI/SCTE 26 2001 (as of 10/29/02)	ANSI/SCTE 26 2001	<i>Home Digital Network Interface Specification with Copy Protection</i>
CEA-931-A	CEA-931-A	<i>Remote Control Command Pass-through Standard for Home Networking</i>
SCTE DVS-097 Rev 7 (PSIP Agreement)	Superceded by ATSC A/65B	<i>ATSC Program and System Information Protocol for Terrestrial Broadcast and Cable</i>
SCTE DVS 234r1 (PSIP Agreement)	Superceded by ANSI/SCTE 65 2002	<i>Service Information Delivered Out-Of-Band For Digital Cable Television</i>
EIA-752	Superceded by CEA-608-B	<i>Line 21 Data Services</i>

3. *Is there a process contemplated for changing the standards referenced in the rules as the underlying standards change over time?*

The parties agree that in adopting the proposed technical rules, the FCC should update references to standards to their current versions as described in Question 1. The parties acknowledge that thereafter technology advances and certain standards may need to transition or sunset. CEA and SCTE have formal corrigenda and errata publication processes that are currently active and likely to be used as operators and manufacturers deploy against these standards and modifications are needed or errors are found. The parties do not intend that subsequent changes in the referenced standards would automatically apply under FCC rules. When changes in standards warrant related changes in FCC rules, the parties anticipate that Commission procedures (e.g., a NPRM process) would be followed prior to adjusting the rules.

We also note that Section 3.11 of the MOU prescribes for MSOs and CE manufacturers to meet at least annually to discuss technology sunsets, and may submit recommendations to the Commission as part of the biennial review process, or such earlier review as may be appropriate.

4. *If the proposed rules were adopted, would it be possible for cable operators to use improved modulation schemes (1024 QAM) or improved compression schemes (MPEG-4)? Does SCTE 40 preclude the use of modulations other than 64 or 256 QAM for video channels? Does SCTE 54 preclude use of encodings other than MPEG-2? If MPEG-4 is permitted under the cable transmission standard, would digital cable ready labeled receivers be able to receive and display MPEG-4 compressed programming content?*

SCTE 40 2003 and 54 2003 were written as voluntary standards, do not address, and do not specifically preclude the use of MPEG-4, 1024 QAM, or other encoding or modulation schemes. The parties are committed to maintaining the viability of and consumer reliance on the plug and play agreement as technologies move forward. The proposed rules do not preclude innovation. In the MOU, MSOs and CE Manufacturers have acknowledged that technology advances and certain standards may need to transition or sunset. MSO and CE Manufacturers have agreed to meet at least annually to discuss technology sunsets, and may submit recommendations to the FCC as part of the biennial review process, or such earlier review as may be appropriate.

5. *How do you define a “digital cable system?” Does it include systems that are digital only in that they pass through 8 VSB broadcast signals? Does it include systems whose only digital programming is from the HITS system?*

We have not adopted a formal definition; however, the cable industry typically considers a digital cable system now to be one which contains one or more channels utilizing QAM for transporting programs and services from a headend to the receiving device. This would include systems whose only digital programming is from the HITS system. We are not aware of any systems now that pass only 8-VSB broadcast signals, nor are we aware of any plans to do so.

However, given our current thinking, we would not consider systems that pass *only* 8-VSB broadcast signals to be “digital cable systems.”

6. *Operators of small cable systems have expressed concerns about the costs of complying with the proposed rules. What changes in system operation, including in particular headend changes, would be required to comply? Please provide cost estimates for compliance with each cable operator support requirement (SCTE 28, 40, 41, 54, 65, PSIP Agreement, POD provisioning & set-top box replacement).*

Small systems that do not reach the 750 MHz capacity threshold are not obligated to upgrade their networks under these rules. From our investigation, we believe that any network requirement applied to 750 MHz systems will likely be in line with costs of ongoing maintenance rather than system upgrades. The cost associated with providing POD security modules, and in some cases making hardware and/or software changes at the headend to support provisioning of the POD, is a continuation of obligations imposed by previously-adopted FCC rules. We anticipate there will be equipment costs associated with PSIP aggregation when multiplexing two or more content sources containing PSIP information. Operators of small systems may face an incremental cost associated with provisioning high-definition set-top boxes with copy protected IEEE 1394 and DVI/HDMI interfaces. These interfaces are currently available on higher-end set-top boxes that a smaller operator might not have otherwise purchased. The costs to small systems for these set-top boxes depend upon their vendors, but are recoverable through regulated lease rates.

7. Given that SCTE 54 and SCTE 40 apply to systems in the 750 MHz or greater category, is there any obligation on lesser capacity systems to transmit in a standardized manner (QAM, MPEG-2)?

We believe the systems under 750 MHz have every incentive to operate their systems in a manner that is consistent with QAM and MPEG-2 in order to take advantage of available system equipment and services and to avoid compatibility problems with the consumer electronics equipment likely to be owned by their subscribers. However, they are not obligated to do so.

8. *What do the proposed rules mean when they reference the requirement for a “functional” 1394 interface? Does functional mean including copy protection? If so, would such copy protection be limited to a certain set of technologies? There is no parallel use of the term “functional” in connection with the other referenced interfaces (DVI and HDMI)? Was this intentional?*

IEEE 1394 is a very flexible interface, and the electrical aspects of this interface are decoupled from the software that allows it to pass certain types of content and control signals. The term “functional” in the case of the IEEE 1394 interface was an acknowledgement between our two industries that prior to the MOU, several MSOs had purchased and, in some cases, deployed high-definition digital set-top boxes which contained an IEEE 1394 interface which do not have software embedded in the STB to allow the 1394 interface to function. Effective

December 31, 2003, upon request of a customer, MSOs will replace any leased high-definition set-top with one that includes a functional IEEE 1394 interface or upgrade the customer's set-top box by download or other means to ensure that the IEEE 1394 interface is functional. The agreement also includes a specific obligation to provide a minimum level of software support to ensure functionality such as the set-top functioning as a tuner and the ability for a recorder to control the set-top. There is no parallel use of the term functional in connection with the other referenced interfaces (DVI and HDMI) because these interfaces were generally associated with future set-top product purchases, and anticipated would be made functional by the manufacturer before delivery to the operator.

PSIP Agreement

9. *The PSIP Agreement seems to require cable operators to only pass through PSIP data that they receive and that is in compliance with ATSC A/65. Is this correct? Is there PSIP data that is received that is not in compliance with ATSC A/65?*

That is correct. The agreement reached in February 2000 detailed the requisite conditions necessary to carry, when available from the content provider, PSIP data on cable systems to support consumer digital receiving devices connected directly to the cable system. As such, these carriage requirements assume the availability of PSIP data from the content provider that is in compliance with ATSC A/65B. We are not aware of any situation where PSIP data received from a content provider is intentionally non-compliant with ATSC A/65B.

10. *Items 3 & 5 of Section 2 imply that the EIT can exist in-band or out-of-band. Where is it mandatory for the EIT to be provided in-band? Out-of-band?*

The PSIP Agreement allows for the EIT to exist in-band, out-of-band, or both. When providing EIT information in compliance with ATSC A/65B, a content provider – such as a terrestrial broadcaster – will provide the PSIP EIT in-band. Therefore, in practice, operators pass through the EIT information in-band.

11. *The proposed technical rules require that systems in the 750 MHz or greater category comply with ANSI/SCTE 65 2002 (as of 10/29/02), provided however that the referenced Source Name Subtable shall be provided for profiles 1, 2 & 3. The PSIP Agreement is slightly different and specifies that cable operators, when transiting event information data out-of-band, shall conform to SCTE DVS 234r1 (now ANSI/SCTE 65) profiles 4 or higher. Is this difference deliberate? Which obligation would you regard as controlling if there is in fact a difference?*

The difference is intentional. Profiles 1-3 define, among other things, how basic channel navigation information is sent out-of-band reflecting current cable industry practice. The Source Name Subtable, which is currently optional as defined by ANSI/SCTE 65 2002 for profiles 1-3, was made mandatory within the proposed rules so CE products could receive a textual name associated with each service. Profiles 1-3, however, do not support the carriage of PSIP information such as EIT data. The proposed rules instead defer to the PSIP Agreement to detail the requisite conditions necessary to carry, when available, PSIP information from the content

provider. Profiles 4 and higher as defined ANSI/SCTE 65 2002 do support the carriage of EIT data, therefore, the PSIP Agreement specifies that when a cable operator chooses to send EIT data out-of-band, the operator will follow one of these profiles.

Labeling

12. *What are the label names that will replace Digital Cable Compatible, “XXX” or “XXX plus YYY”? How will this unidirectional label relate to an eventual bidirectional label?*

The parties have agreed that unidirectional devices will be labeled “Digital Cable Ready.” Upon further discussion, we believe there is no additional name needed for such devices with DVI ports (YYY). Logos are under final joint development to mark these products, materials and connectors. It is anticipated that interactive devices will be called “Interactive Digital Cable Ready.”

Device Certification and Technical Compliance

13. *It appears that certain aspects of the manufacture and operation of unidirectional digital cable products are intended to be controlled both through the labeling rules and processes and through the DFAST license process (compare page 4 of proposed rules with page 4 of DFAST license). What is the intended relationship between these two sets of controls? For example, is it contemplated that there could be a device that would be manufactured, sold and connected by subscribers to cable systems in compliance with the DFAST license requirements which at the same time would not comply with all the requirements necessary to be labeled “Digital Cable Compatible?”*

The parties intend that “Digital Cable Compatible” devices will be the same as Unidirectional Digital Cable Products that are compliant under DFAST. However, different sets of obligations are set out in the proposed regulations and in the DFAST agreement. The testing and self-certification process is included in FCC regulation, rather than in the DFAST license itself. The regulations also contain a requirement for phased in DVI ports on certain HD televisions. The DFAST license contains compliance and robustness rules, a set of remedies, and third party beneficiary rights.

14. *The development of the “test suite,” as described in the proposed rules, involves a delegation of responsibility to CableLabs and CEA who would develop and mutually agree on the tests. Is there any process for input by other parties into the development of the tests? Do you believe that such a delegation is permitted under the applicable statutory provisions?*

The development of the Joint Test Suite has been a collaborative process between the CE manufacturers and CableLabs. The parties began with the Protocol Implementation Conformance Statement (PICS) in the test suite developed in the OpenCable process. The

parties then began refining the PICS to eliminate those which they believe are not required under the testing regime of the MOU, and tracing them to the extent possible to applicable standards. The development of this joint test suite on this bilateral basis is an efficient means for refining the test suite previously developed through multi-party efforts.

The Commission has jurisdiction to adopt the rules as proposed and to permit these parallel processes to occur. The parties have previously described the Commission's jurisdiction to adopt the rules as proposed. We note that Section 629 expressly contemplates a role for industry standard-setting organizations, and rule 15.118 contemplates the development of generally accepted testing standards for digital devices; and the FCC has previously approved the role of industry in bringing to fruition the standards and testing regime to promote the retail availability of navigation devices.

15. *What are the specific tests in CableLabs' certification test suite?*

These are currently being developed, as described in question 14.

16. *What are the initial certification procedures (i.e., cost, timing, etc.)?*

When the FCC takes action on the MOU, CableLabs will prepare a schedule to accommodate the certification process for unidirectional devices manufactured under the MOU. CableLabs has already commenced discussions with CE manufacturers of the means for accommodating the specific testing schedules they desire for product development during 2003 and 2004.

CableLabs is a non-profit company and the fees cover only CableLabs' costs associated with the testing and certification process. It is currently developing costs for certification of DFAST devices, but expects the cost to be in the same order of magnitude as cost for DOCSIS certification, which is currently \$70,000 for full certification, the first time through. Testing schedules and cost continue to be an item of discussion.

17. *What are the self-certification procedures (i.e., timing, documentation, filing, etc.)?*

The Self-Certification Documentation is an affirmative statement by the manufacturer that a Unidirectional Digital Cable Television Product model has been tested and has passed the Test Suite. The documentation must be submitted to CableLabs or third party testing facility before a product is labeled or marketed as described in the rules. For a manufacturer's first product, and also for a manufacturer's first television if the first product is not a television, the documentation must also include the passing results of all Critical Tests in the test suite and the results of all other tests in the test suite.w

18. *Who determines what third party test facilities are "appropriately qualified" to conduct certifications?*

The parties would mutually agree to a set of appropriate qualifications for third party testing facilities. The parties have discussed possible efforts to jointly establish such a third party facility, but at present testing is anticipated to occur at the existing facilities at CableLabs.

19. *What types of changes to a model would trigger recertification by CableLabs or an appropriately qualified 3rd party rather than self-certification?*

DFAST does not require recertification by CableLabs of model changes. Only the prototype of a manufacturer's first model Unidirectional Digital Cable Television Product is brought in to CableLabs or an appropriately qualified third-party test facility to execute the Test Suite. Subsequent products are self-certified. If the manufacturer's first model Unidirectional Digital Cable Product is not a Television, the manufacturer's first model Unidirectional Digital Cable Product, is brought in to CableLabs or an appropriately qualified third-party test facility to execute the Test Suite. Subsequent products (other than the first Unidirectional Digital Cable Television Product) are self-certified. The manufacturers contemplate that all significant changes and all new models would be subjected to testing and self-certification.

DFAST License

20. What are the standards for revocation of certificates?

The parties are presently working through the circumstances and process by which a device certificate would be included on a certificate revocation list (CRL). However, in general MSOs do not intend to unilaterally revoke device certificates; but instead intend to use CRLs to identify compromised devices, and rely on EMMs (conditional access signals which are sent to a subscriber's POD module) to deny or limit service to compromised devices, rather than "turning off" the device.

Encoding Rules

21. *Is it the parties' intention to exempt from the encoding rules all content delivered by MVPDs via an IP connection?*

It is the parties' intention that the encoding rules be applied in a manner which assures parity among video distributors. Thus, the encoding rules do not apply to a multi-channel video programming distributor's operations via cable modem or to cable modem services. The MOU includes a commitment among the parties to seek legislation that subjects Internet and other competing technologies for the distribution of video to the same encoding rules (including rules applicable to the use of selectable output controls and down-resolution). The proposed FCC rules include the right to offer temporary bona fide trials; procedures for launching undefined business models; procedures for petitioning to apply new rules to established business models; and procedures for complaints if a party has substantial basis to believe and does believe in good faith that a service within a Defined Business Model has been launched without a petition as required by the Rule.

